

Giant hyracoid from basal Middle Miocene deposits at Gebel Zelten, Libya

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ABSTRACT

Previous records of the presence of the hyracoid *Prohyrax* sp. at Gebel Zelten are unsubstantiated and the original material seems to have been lost. A distal metapodial of a large hyracoid collected by R. Savage at locality W, Gebel Zelten, is similar in morphology and dimensions to a fossil from Nova, South Africa provisionally attributed to *Parapliohyrax*. Large hyracoids were thus present in Libya during the early part of the Middle Miocene.

Key words: Middle Miocene, Gebel Zelten, Hyracoidea, Metapodial.

RESUMEN

Los registros previos de la presencia del hyracoideo *Prohyrax* sp. en Gebel Zelten son insuficientes y el material original parece haberse perdido. Un fragmento distal de metápodo de un gran hyracoideo recolectado por R. Savage en la localidad W, Gebel Zelten es similar en morfología y dimensiones al fósil de Nova, Sudáfrica provisionalmente atribuidos a *Parapliohyrax*. Los grandes hyracoideos estuvieron presentes en Libia durante la primera parte del Mioceno Medio.

Palabras clave: Mioceno Medio, Gebel Zelten, Hyracoidea, Metápodo.

Introduction

Previous records of hyracoids from the basal Middle Miocene deposits at Gebel Zelten, Libya, have not been substantiated. A specimen attributed to cf *Prohyrax* by Savage & Hamilton (1973) was never described, and in any case it was collected from deposits that are some 50 km north of Gebel Zelten (Savage pers. comm.). This record was repeated by Meyer (1978) but without further precision. A search for the specimen in the Savage collection now held in the NHM, London, failed to turn it up, from which it is surmised that the fossil has either been lost, or was mislaid, or was sent to someone for study. Unless the specimen resurfaces, this record should be expunged from the fauna of Gebel Zelten.

However, in the Natural History Museum, London, among the material labelled “W” in the Savage collection from Gebel Zelten, there is a distal metapodial of a large hyracoid. This specimen is similar in morphology and dimensions to a fossil from

Nova, South Africa, attributed to *Parapliohyrax* sp. by Pickford (2003b) and is larger than material identified as *Brachyhyrax aequatorialis* from Koru, Kenya, (Tsujikawa & Pickford, 2006) and *Afrohyrax championi* from Rusinga, Kenya (Fischer, 1986). It is much larger than metapodials belonging to *Prohyrax hendeyi* from Arrisdrift, Namibia (Pickford, 2003a) and is bigger than a metapodial of *Pliohyrax graecus* from Casablanca M, Spain (Pickford *et al.*, 1997).

Description

The Gebel Zelten specimen is an axial metapodial (ie the third or fourth one) but it is not possible to determine whether it is from the forelimb or the hindlimb, nor is it possible to determine from which side of the body it comes. The diaphysis is slightly compressed antero-posteriorly, but not greatly so. It has well developed medial and lateral tuberosities at the distal extremity of the diaphysis, just proximal to

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Fig. 1.—Giant hyracoid metapodial (specimen W) from Gebel Zelten, Libya preserved in the Natural History Museum, London. A) anterior view, B and D) medial and lateral views, C) posterior view, and E) distal view (Scale 10 mm).

the medial and lateral depressions of the epiphysis. These tuberosities form the broadest part of the distal end of the metapodial, the epiphysis being narrower medio-laterally. The posterior part of the shaft has a low but sharp crest of bone at its distal extremity that extends in line with the central ridge of the epiphysis. On the epiphysis the central posterior ridge or keel fades out distally, and there is no sign of it on the anterior (dorsal) side. On its anterior surface the diaphysis has a wide transverse depression immediately above the epiphyseal suture. In anterior and posterior views the bone is almost symmetrical, in this respect differing from the slightly asymmetrical bone of *Brachyhyrax* described by Tsujikawa & Pickford (2006). In lateral view, the distal articulation is gently canted posteriorly, so that slightly more of the articulation is posterior to the axis of the diaphysis than is anterior to it.

The distal epiphysis measures 25.2 mm medio-laterally and 23.7 mm antero-posteriorly. The dis-

tance between the distal diaphyseal tuberosities is 29 mm. This compares well with the specimen from Nova (South Africa) described by Pickford (2003b) which measures 28.2 mm, 27.6 mm and 31.7 mm respectively (NB: In Pickford, 2003b, there was a misprint of the antero-posterior diameter of the epiphysis of the Nova specimen).

Discussion

The recognition of a distal metapodial of a large hyracoid in the Savage collection from Gebel Zelten, Libya, is of interest for two reasons. Firstly it reveals that large hyracoids lived in the region during the Middle Miocene, just as they did in East and South Africa (Pickford, 2003b) and Europe (Pasalar, Turkey (MN 6)) (Fortelius, 1990). Secondly, it shows that a knowledge of post-cranial bones is essential for completing faunal lists, most of which rely heavily on cranio-dental remains.

In general, hyracoid post-cranial bones are rare in the fossil record, and for this reason it is not yet possible to determine the genus and species to which they belong, unless they are found in articulation with cranial remains (Thomas *et al.*, 2004) or in narrow association with them (Pickford, 1994, 2003a). It is possible that the Gebel Zelten metapodial belongs to *Parapliohyrax*, but some doubt will remain about its precise taxonomic affinities until dental remains are found at the site. This genus is already known to occur in North Africa, at Beni Mellal, Morocco (the type locality) (Lavocat, 1961 ; Ginsburg, 1977) and Kairouan, Tunisia (Pickford, 2003b). Whatever the eventual identification, the Gebel Zelten fossil indicates the presence of a donkey-sized hyracoid at the locality some 16-15 million years ago. Pickford (2003b) estimated the body weight of this hyracoid to be ca 80 kg.

ACKNOWLEDGEMENTS

I thank Sandra Chapman, Jerry Hooker and Andy Curren (Natural History Museum, London) for help and access to the collections in their care. Thanks to Jorge Morales for the invitation to participate in the memorial volume in honour of the late Dr Dolores Soria.

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Recibido el 5 de septiembre de 2006
Aceptado el 3 de noviembre de 2006